

REMARKS

Claims 1-47 are pending in the application, of which Claims 16-47 have been withdrawn in response to a restriction requirement. Claims 1-15 have been examined and stand rejected. Claim 1 has been amended. Reconsideration and allowance of Claims 1-15 is respectfully requested.

Affirmation of Restriction Requirement Election

The election of Group I, Claims 1-15, is affirmed, as communicated by telephone on June 19, 2006.

The Rejection of Claims 1-10, 12, 13, and 15 Under 35 U.S.C. § 103(a) as Being Unpatentable Over Lahann et al. (U.S. Patent No. 7,020,355) in View of Carlson et al. (U.S. Patent No. 6,939,515)

Claims 1-10, 12, 13, and 15 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Lahann et al. (U.S. Patent No. 7,020,355) in view of Carlson et al. (U.S. Patent No. 6,939,515). This rejection is respectfully traversed. The Examiner cites Lahann et al. as disclosing a nanolayer of a material on a substrate and applying a stimulus to the substrate in order to shift the nanolayer from a first conformation state, characterized by a first property, to a second conformation state, characterized by a second property. The Examiner also cites Lahann et al. as disclosing the use of temperature as the stimulus that causes the conformational change. Finally, the Examiner cites Lahann et al. as disclosing a variety of materials that can be controlled in response to temperature, including poly(N-isopropylacrylamide). Because poly(N-isopropylacrylamide) is a known temperature responsive material disclosed in both Lahann et al. and the present application, the Examiner asserts that the combination of the known temperature responsive material and the device taught by Lahann et al. would provide one of ordinary skill in the art with a reasonable expectation of success in combining the two elements to produce the claimed invention. It is submitted that the device of Lahann et al., whether coated with poly(N-

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isopropylacrylamide) or some other polymer, is entirely different than a device of applicants' amended claims. Lahann et al. teaches a device with a stimulus-responsive self-assembled monolayer (SAM) film, while Claim 1 has been amended to clarify that the device of the claimed invention comprises a temperature-responsive film that is deposited by plasma deposition. The types of films produced by the Lahann et al. SAM technique and the plasma deposition technique of the present invention are entirely different. SAM molecules are characterized by having head groups that strongly bond to a substrate (e.g., thiol group bonding to gold substrate) and tail groups that form strong interactions. SAMs are limited in molecular length because of the latter requirement, and a polymer, such as poly(N-isopropylacrylamide), will not form a SAM because it does not have a known SAM-forming head group and the length of a polymer will generally exclude it from satisfying the necessary SAM-forming tail-group properties. Because poly(N-isopropylacrylamide) cannot form a SAM film, there is not a reasonable expectation of success of combining the known temperature-responsive material poly(N-isopropylacrylamide) with the teachings of Lahann et al. In sharp contrast, the plasma deposition-coated devices of applicants' amended claims will not produce SAM films because of the isotropic nature of the plasma deposition process and the larger molecular weight molecules used in the technique. The two processes are mutually exclusive with respect to the species of materials that can be deposited by each.

It is submitted that the plasma deposition-coated devices of applicants' amended claims would not have been obvious to a person of ordinary skill in the art in view of Lahann et al.

The Examiner characterizes Carlson et al. as disclosing an assay device that includes a thermal platform that can support and controllably heat an array. Carlson et al. teaches a system for performing high-throughput preparation and screening of salts and polymorphs of drug candidates, whereas the claimed invention is a device for binding cells or molecules. The

heating element from Carlson et al. that the Examiner cites as prior art is used for performing melting point analysis (see Col. 55, line 27), and not for stimulating a thermally-responsive film in a device such as the claimed invention. Because the type of machine disclosed by Carlson et al. is not in the same field as the claimed invention and would not be looked to by one of skill in the art as relevant to the particular problem to be solved, it is submitted that the reference is nonanalogous art and there is no teaching, motivation, or suggestion to combine the reference with Lahann et al. For a reference to be analogous art, if it is outside of the field of the claimed invention, "the reference may be considered analogous art if subject matter disclosed therein is relevant to the particular problem with which the inventor is involved." MPEP 2141.01(a). It is submitted that the Carlson et al. reference is both outside of the field of the claimed invention and also not relevant to the problem with which the invention is involved. Accordingly, it is believed that Carlson et al. has been improperly combined with Lahann et al. in the rejection of Claims 1-10, 12, 13, and 15. However, even if combined, Carlson et al. does not overcome the deficiencies of Lahann in failing to disclose or suggest the plasma deposition-coated devices of applicants' amended claims, as discussed in detail above.

In view of the above, it is demonstrated that the combination of Lahann et al. and Carlson et al. does not render the invention of Claim 1 obvious, or Claims 2-10, 12, 13, and 15 which depend therefrom. Accordingly, the Examiner is respectfully requested to withdraw this ground of rejection.

The Rejection of Claims 11 and 14 Under 35 U.S.C. § 103(a) as Being Unpatentable over Lahann et al. (U.S. Patent No. 7,020,355) in View of Carlson et al. (U.S. Patent No. 6,939,515), in Further View of Manger et al. (U.S. Patent No. 5,858,687)

Claims 11 and 14 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Lahann et al. (U.S. Patent No. 7,020,355) in view of Carlson et al. (U.S. Patent No. 6,939,515), in further View of Manger et al. (U.S. Patent No. 5,858,687). The Examiner builds upon the

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previous rejection of Claim 1 (based on Lahann et al. in view of Carlson et al.) by citing Manger et al. as further disclosing the use of assays using live cells. It is submitted that Lahann et al. and Carlson et al. do not combine to teach or suggest all of the limitations of the invention, provide a reasonable expectation of success, or provide a teaching or suggestion to combine references for the reasons given above. The addition of the teachings of Manger et al. does not cure any of these defects and thus does not render Claims 11 and 14 obvious.

In view of the above, it is demonstrated that the combination of Lahann et al., Carlson et al., and Manger et al. fail to teach, suggest, provide motivation to make or otherwise render obvious the claimed method of the invention. Accordingly, applicants respectfully request removal of this ground of rejection.

Conclusion

Applicants believe that the application is now in condition for allowance. If any issues remain that may be expeditiously addressed in a telephone interview, the Examiner is encouraged to telephone applicants' attorney at the telephone number set forth below.

Respectfully submitted,

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